THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

Room 261, Ziskind Building
on Wednesday, Jun 10, 2015
at 11:00

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A description of two-generated subalgebras of a polynomial ring in one variable
and a new proof of the AMS theorem

Abstract:

The famous AMS (Abhyankar-Moh-Suzuki) theorem states that if two polynomials \(f\) and \(g\) in one variable with coefficients in a field \(F\) generate all algebra of polynomials, i.e. any polynomial \(h\) in one variable can be expressed as \(h = H(f, g)\) where \(H\) is a polynomial in two variables, then either the degree of \(f\) divides the degree of \(g\), or the degree of \(g\) divides the degree of \(f\), or the degree of \(f\) and the degree of \(g\) are divisible by the characteristic of the field \(F\). There were several wrong published proofs of this theorem and there are many correct published proofs of this theorem but all of them either long or not self-contained. Recently I found a (relatively) short and self-contained proof which is not published yet and which I can explain in one-two hours.